

AL'TSHULER, B.A.; SAIMANOV, G.D.; SOKOL'SKIY, A.D.; KARASEV, P.P.

Use of refractory concrete for lining cars and tunnel annealing  
lehrs. Ogneupory '22 no.7:326-329 '57. (MERA 10:8)  
(Refractory materials) (Concrete)

KARASEV, P.P.

AL'TSHULER, B.A.; SALMANOV, G.D.; SOKOL'SKIY, A.D.; KARASEV, P.P.

Use of heat-resistant concrete for the construction of electric  
(vacuum) bell furnaces for annealing. Ogneupory 22 no.9:425-429  
'57. (MIRA 10:11)

1. Nauchno-issledovatel'skiy institut Metallurgkhimistroya i  
Sverdlovskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta  
promyshlennykh sooruzheniy.  
(Electric furnaces) (Concrete)

84186

S/019/60/000/013/064/112

A152/A029

26-2252

AUTHORS: Burtsev, V.T., Samarin, A.M., Bulakhov, K.A., Gurskiy, G.V.,  
Karasev, R.A., Kazanskiy, V.A.

TITLE: A Device for Pumping Liquid Metal

PERIODICAL: Byulleten' izobreteniy, 1960, No. 13, p. 49

TEXT: Class 31c, 12<sub>02</sub>. No 129800 (630426/22 of June 8, 1959). This device constitutes a vacuum chamber with two vertical channels for liquid metal being pumped by an induction pump. It has the following special features: to extend the free area of metal by atomizing the metal stream, the above channels are longer than the height of the metal column raised under the influence of the difference between the atmospheric pressure and the pressure in the chamber, in order to make metal overflow over the baffle of the vacuum chamber, from one channel into the other, after the induction pump has been switched on. X

Card 1/1

KARASEV, R. A.

KARASEV, R. A. -- "INVESTIGATION OF THE REDUCING POWER OF VANADIUM." SUB 5 FEB 52, INST OF METALLURGY IMENI A. A. BAYKOV, ACAD SCI USSR (DISSERTATION FOR THE DEGREE OF CANDIDATE IN TECHNICAL SCIENCES)

SO: VECHERNAYA MOSKVA, JANUARY-DECEMBER 1952

KARASEV, R. A.

USSR/Metallurgy - Steel, Gas Analysis Sep 52

"Determination of Oxygen, Nitrogen and Hydrogen in Hard Steel," R. A. Karasev, A. Yu. Polyakov

Iz Ak Nauk SSSR, Otdel Tekh Nauk, No 9, pp 1360-1368

Describes apparatus for detn of gases in steel by method of melting in vacuum. Installation is equipped with 15-kw high-frequency vacuum furnace. Analysis of extracted gas is performed by liquid N freezing out of its components at temp of liquid N and measuring amount of these components in calibrated vols at room temp. Performance of installation is characterized by very small correction factor 248791

for O and H and by high productivity -- 15-16 samples per day. Submitted by A. M. Samarin, Corr Mb Acad Sci USSR, 22 May 52.

248791

238T15

KARASEV R. A.

USSR/Chemistry - Vanadium

Aug 52

"Solubility and Activity of Oxygen in Molten Iron and Vanadium," R. A. Karasev, A. Yu. Polyakov and Corr Mem Acad Sci USSR A. M. Samarin, Inst of Metallurgy imeni A. A. Baykov, Acad Sci USSR

"DAN SSSR" Vol 85, No 6, pp 1313-1316

The results from the exptl detn of the deoxidizing capacity of V are presented. V lowers the solubility of O in liquid Fe and decreases its activity. V has a much lower deoxidizing capacity than Si.

238T15

KARASEV, R.A.

Chemical Abst.  
Vol. 48 No. 4  
Feb. 25, 1954  
General and Physical Chemistry

Reducing ability of vanadium. R. A. Karasev, A. Yu. Polyakov, and A. M. Samarin. *Izv. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* 1952, 1794-1801; cf. C.A. 44, 9307g. — The reducing ability of V was examd. in connection with the effect of V on soly. and activity of  $O_2$  dissolved in liquid Fe. In the exptl. installation equil. was attained between liquid Fe that contained V and the gas phase of  $H_2$  and  $H_2O$  (complete description of the app. is given). V reduces the soly. of  $O_2$  in liquid Fe and lowers the activity of  $O_2$ . V appears to be a weaker reducing agent than Si. Depending on the content of V in liquid Fe (the range examd. was from 0 to 2.6%) and consequently on the partial pressure of  $O_2$  in the gas phase, the compn. of the oxide phase, formed by oxidation of Fe-carried V, also changes. Up to 2% V the compn. of the oxide phase varies from variable values up to  $VO_2$ .

Chemt  
③

MF  
4-28-54

KARASEV, R. A.

B  
(2) met

Chemical Abst.  
Vol. 48 No. 4  
Feb. 25, 1954  
Metallurgy and Metallography

Activity of carbon and oxygen in melts of iron-carbon-oxygen. A. M. Samarin and R. A. Karasev. *Izv. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* 1953, 1130-8; cf. C.A. 45, 4187d; Marshall and Chipman, C.A. 36, 6118<sup>1</sup>.—In Fe-C melts contg. less than 1% C the activity coeffs. of C and O are substantially constant quantities. Results obtained at 1540° by M. and C. were examd., and the values of CO and CO<sub>2</sub> partial pressures recalcd. Since the differentiated form of the reaction equation can be written as:  $\log(P_{CO}/P_{CO_2}) = \log K_1 + \log f_C + \log f_O$ , the necessary terms were calcd. from the above data. Up to 1% C content the plot of  $\log(P_{CO}/P_{CO_2})$  against  $\log[\%C]$  gave a straight line, indicating clearly that the activity coeff. of C in liquid Fe contg. O is constant. Values from compus. with more than 1% C were too few to be employed in calcs., but their scattering on the plot was noted. G. M. Kosolapoff



*KARASEV, R. A.*

USSR/Chemistry - Metallurgy

Card 1/1 : Pub. 124 - 10/24

Authors : Karasev, R. A., Cand. of Tech. Sc.; and Polyakov, A. Yu.

Title : ~~XXXXXXXXXXXX~~  
Determination of gas contents in metals and alloys

Periodical : Vest. AN SSSR 11, 61-62, November 1954

Abstract : An industrial method for the determination of gas contents (hydrogen, oxygen, nitrogen) in steel and alloys is briefly described. This method is considered highly universal from the view point of the number of gases to be determined and is also very suitable for the analysis of various types of steel. A special rational system developed at the A. A. Baykov Metallurgical Institute of the Academy of Sciences USSR, which is used in conjunction with the above mentioned method, is described.

Institution : .....

Submitted : .....

KARASEV, Robert Alekseyevich

SAMARIN, Aleksandr Mikhaylovich; KARASEV, Robert Alekseyevich, kandidat  
tekhnicheskikh nauk; VERTMAN, Aleksandr Abramovich, inzhener;  
KAREV, Viktor Nikolayevich, kandidat tekhnicheskikh nauk;  
UDAL'TSOV, A.N., glavnyy redaktor; SHTYNBOK, G.Yu., redaktor

[Apparatus for studying kinetic processes at high temperatures.  
Apparatus for studying the discharge of viscous liquids through  
orifices and nozzles] Ustanovka dlia issledovaniia kinetiki protsessov  
pri vysokikh temperaturakh. Ustanovka dlia issledovaniia  
istecheniia viskikh zhidkostei iz otverstii i nasadkov. Tema 4.no.P-56-457  
(MLRA 10:5)  
Moskva, 1956. 15 p.

1. Moscow, Institut tekhniko-ekonomicheskoy informatsii.  
(Chemical apparatus) (Viscosity) (Fluid dynamics)

KARASEV, R.R.

Sulfur activity in silicon-containing iron R. A. Karasev  
and A. M. Samarin. *Invest. Acad. Nauk S.S.R.* 1964  
No. 10, 1964, No. 10, 1964, No. 10, 1964, No. 10, 1964

The same exposed alloy surface to the last heat-treatment  
was assured by using uniform  $\text{Al}_2\text{O}_3$  crucibles. Five of  
the crucibles were used for the heat-treatment of the alloy.

KARASEV, R.A.

Dr. P. L. Lohmeyer, A. Schickelschmidt examined. Of Kroll and Seilchen's oxides reduction with C (C.A. 42, 5305); indicated the possibility of low-C, V production by a vacuum reduction at below the m.p. of V (1920°).  $V_2O_5$ , obtained by  $V_2O_5$  reduction with H at 500-600°, was used in the preliminary thermographic studies with C.



SAMARIN, A.M.; KARASEV, R.A.

Use of radioactive isotopes in metallurgy. Priroda 45 no.12:14-19  
D '56. (MLRA 10:2)

1. Chlen-korrespondent Akademii nauk SSSR. (for Samarin).  
(Radioisotopes--Industrial applications)  
(Metallurgical research)

KARASEV, R.A., SAMARIN, A.M.

"Equilibrium of Reaction of Liquid Iron Decarbonization at Lower Pressure,"  
lecture given at Fourth Conference on Steelmaking, A.A. Baikov Institute of  
Metallurgy, Moscow, July 1 - 6, 1957

KARASEV R A

content in the metal from the beginning of oxidation is determined by its equilibrium with the  $V$  present in the metal. However, when the metal is oxidized during the after-blow, the  $O$  content in the metal is much lower than corresponds to the given  $V$  content. During the after-blow at 1400°  $V$  can be oxidized only on the gas-metal interface during vigorous stirring. All the factors which tend to increase the reaction surface between the oxidizer and the liquid metal and to raise the  $O$  content in the bubbles of the gaseous oxidation must, therefore, favor the oxidation reaction in the molten gas-iron.

W. M. Sternberg



DRIVING, N. YA., KARASHEV, R. A. and SAMARIN, A.M.  
Institute of Metallurgy im. A. A. Baykov, Moscow

"Application of the Mass-Spectrometer to Investigation of the Liquid  
Steel Decarbonization Kinetics in Vacuum."

paper presented at Second Symposium on the Application of Vacuum Metallurgy.

*Moscow - 1-6 July 1958*

KARASEV R. A.

BURTSSEV, V. T., KARASEV, R. A. and SAMARIN, A. M.  
Institute of Metallurgy im. A. A. Baykov

"Vacuum Desulphurization of the Liquid Iron Alloys."

paper presented at Second Symposium on the Application of Vacuum Metallurgy.

Moscow, 1-6 July 1958

SAMARIN, A. M. and KARASEV, R. A.

"Mechanism of Gas Removal from Liquid Metal in Vacuum."

"Some Properties of Vacuum Treated Bessemer Steel."

paper submitted at Fifth National Vacuum Technology Symposium, San Francisco, Calif.,  
22-24 Oct 1958.

Comments, B-3,118,970, 8 Dec 58

AUTHOR:

Samarin, A.M., ~~Member~~ Corresponding 20-119-5-41/59  
AS-USSR, and Karasev, R.A.

TITLE:

The Desoxidation Capability of Carbon in Vacuum  
(O raskislitel'noy sposobnosti ugleroda v vakuume)

PERIODICAL:

Doklady Akademii Nauk SSSR, 1958, Vol. 119, Nr 5,  
pp. 990-992 (USSR)

ABSTRACT:

In order to determine the pressure dependence of the desoxidation Capability of carbon a series of experimental meltings was carried out in which liquid iron with various concentrations of carbon in high vacuum was exposed to a certain temperature until the beginning of equilibrium between the carbon and oxygen dissolved in liquid iron. These experiments were carried out at a pressure of  $(5 - 7) \cdot 10^{-6}$  torr in a resistance furnace. A molybdenum spiral served as heating device. Crucibles of  $MgO$ ,  $Al_2O_3$ ,  $ThO_2$ ,  $ZrO_2$  and  $BeO$  proved to be unsuitable and therefore the melting experiments were carried out in corundum crucibles. The results obtained in these experiments are compiled in a table. The experimentally found oxidation

Card 1/3

KARASEV, R.A.

VAN DZIN-TAN; KARASEV R.A.; SAMARIN, A.M.

Determination of the influence of additions in the  
surface tensions of liquid iron.

report submitted for the 5th Physical Chemical Conference on  
Steel Production.

MOSCOW \_\_\_\_\_ 30 JUN 1959

18(0)  
AUTHOR:

Karasev, R. A., Candidate of  
Technical Sciences

SOV/30-59-3-31/61

TITLE:

News in Brief (Kratkiye soobshcheniya). The Fifth National  
Symposium on Vacuum Technology (Pyatyy natsional'nyy  
simpozium po vakuumnoy tekhnike)

PERIODICAL:

Vestnik Akademii nauk SSSR, 1959, Nr 3, pp 106-107 (USSR)

ABSTRACT:

This symposium was held from October 22 to October 24, 1958  
in San Francisco (USA, California). It was attended by more  
than 400 persons including representatives from England,  
Belgium, Italy, Canada, the USSR, the German Federal Republic,  
France, and Japan. Work was carried out by 7 Committees  
dealing with the following subjects: bases of vacuum technology;  
use in laboratory practice, vacuum systems and their compon-  
ents; vacuum devices and the system of training specialists;  
ultrahigh vacua; the production of thin films by evaporation;  
the application of vacuum technology in industry. The Soviet  
delegation consisted of A. M. Samarin, Corresponding Member  
of the Academy of Sciences, USSR, and R. A. Karasev,  
Candidate of Technical Sciences. They took part in the work  
of the 2 last-named committees. A. M. Samarin submitted 2

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News in Brief. The Fifth National Symposium  
on Vacuum Technology

SOV/30-59-3-31/61

reports: on the process of gas-removal from liquid metal in  
the vacuum, and on some properties of Bessemer steel treated  
in the vacuum.

Card 2/2

# PHASE I BOOK EXPLOITATION 507/508

Abdumalya bank SSSR. Komitaya po fiziko-khimicheskoi osnove proizvodstva stali  
Primeneniye vakuum v metallurgii (Use of Vacuum in Metallurgy) Moscow, Izdat-  
vo SSSR, 1960. 334 p. Breva slip inserted. 4,500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut metallurgii i stali A.N. Baykova.  
Komitaya po fiziko-khimicheskoi osnove proizvodstva stali.

Reap. Ed.: A.M. Samarin, Corresponding Member, Academy of Sciences USSR; Ed. of  
Publishing House: G.M. Makovskiy; Tech. Ed.: G.G. Markovskiy.

PURPOSE: This collection of articles is intended for technical personnel interest-  
ed in recent studies and developments of vacuum steelmaking practice and equip-  
ment.

COVERAGES: The book contains information on steel setting in vacuum induction fur-  
naces, and vacuum arc furnaces, reduction processes in vacuum, and degassing of  
steel, and alloys. The functioning of apparatus and equipment, especially  
vacuum furnaces and vacuum boiler pumps is also analyzed. Periodicities are  
mentioned in connection with some of the articles and will appear in the Table  
of Contents. Three articles have been translated from English. Some of the

articles are: J.P. and S.I. Khitrik, Effect of Vacuum Treatment [in a Ladle] 127  
of the Carbonaceous Ferrochrome on the Amount of Its Oxide Inclusions

Zakoyev, J.P. and P.I. Shumayev. Physicochemical Principles of Vacuum-Thermal  
Methods of Treating Manganese 137

## PART IV. DECLASSING OF STEEL AND ALLOYS

Korits, I.M., A.I. Leontiev, and A.M. Samarin. Vacuum Treatment of Bessemer  
Steel 143

Kuznetsov, M.P., and G.S. Tsukanov. The Effect of Vacuum Treatment in Ladle  
on the Properties of Bessemer Manganese Steel 151

Travaglini, A.I., and P.D. Koldakov. The Effect of Vacuum Treatment in Ladle  
on the Weldability of Bessemer Constructional Steel 156

Otko, G.M., G.A. Solov'ev, I.I. Anshelov, N.N. Kozlov, P.I. Dmitriyev, and  
M.O. Lepshova. Use of Vacuum for Improving the Quality of Alloyed Steels 166

Martynovskiy, I.A., and Yu.D. Malinov. Some Theoretical and Practical Prob-  
lems of Steel Degassing 178

Chernko, M.M., A.P. Tretyachenko, and Ye.I. Kozlov. The Effect of Vacuum  
Treatment of Molten Poured on the Quality of Shtib's Steel (the work was  
performed by the Department of Metallurgy, Institute of Engineering Sci-  
ences, Academy of Sciences of the USSR, and the Thermophysical Institute of the  
USSR Academy of Sciences, in Zaporozhye) with the participation of engineers  
Ye.I. Kozlov, M.P. Kozlovskiy, M.P. Kozlovskiy, Ye.I. Kozlov, A.M. Samarin,  
Ye.I. Kozlov, A.I. Khitrik, P.D. Koldakov, Yu.D. Malinov, and G.S. Tsukanov] 189

Tolstoguzov, M.Y., I.I. Kozlovskiy, A.P. Glazov, I.I. Kozlov, M.O. Kozlovskiy,  
P.M. Kozlovskiy, and Ye.I. Kozlovskiy. Vacuum Treatment of Molten Ferrochrome  
Steel and of Shtib's Steel [A.S. Shiba, M. Kozlovskiy, P.D. Kozlovskiy,  
Ye.I. Kozlovskiy, Ye.I. Kozlovskiy, and P.D. Kozlovskiy participated in the work] 196

Reisikov, B.A., I.M. Malinikov, and M.Ya. Smirnov. Investigation of Vacuum-  
Treated Steel for Castings 203

Reisikov, B.A., and I. Klebchik. Investigation of the Quality of Aluminum Alloys  
[in Ladle]. Use of Vacuum for Raising the Quality of Aluminum Alloys 211

Zak, G. [Polish People's Republic, Institute of Iron Metallurgy in Gliwice] 219

Reisikov, B.A., B.A. Karsner, and A.M. Samarin. Decarburization of Molten  
Iron Alloys in Vacuum 223

Reisikov, B.A., and I.I. Kozlovskiy. Retraction of Nonmetallic Inclusions  
in the Vacuum Treatment of Steel 230

Reisikov, B.A., B.A. Karsner, and I.M. Samarin. Investigation of the  
Kinetics of Steel Decarburization in Vacuum by Means of a Mass Spectrometer 243

Reisikov, B.A., O.A. Igda, and B.M. Lepshikhin. The Effect of Hydrogen and  
Nitrogen on the Activity of Silicon in Molten Cast Iron 248

Reisikov, B.A. Investigation of Gas Liberation and Penetrability of Ceramics  
in Vacuum 251



18:8100  
5.4400

68683

S/180/60/000/01/003/027

E071/E135

AUTHORS: Van Tszin-Tan, Karasev, R.A., and Samarin, A.M. (Moscow)  
TITLE: The Influence of Carbon and Oxygen on the Surface Tension  
of Liquid Iron

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Letallurgiya i toplivo, 1960, Nr 1, pp 30-35 (USSR)

ABSTRACT: The results of the determination of surface tension of liquid iron and its changes under the influence of carbon and oxygen are reported. The surface tension was measured by the method of a laying drop in an atmosphere of purified helium. The apparatus is shown in Fig 1. The method of calculating the surface tension from the shape of the iron drop was described previously (Ref 8). Two methods of heating the drop, resistance and high frequency, were used, in order to compare the data obtained with various heating methods and be able to carry out the determinations at temperatures above 1650 °C. The sample of iron used in the experiments contained 0.001% of oxygen, 0.001-0.002% of carbon, 0.002% of sulphur, less than 0.002% of nitrogen and traces of copper, silicon and nickel. The experimental results are given in the Table (p 32) and Figures 2, 3, 4, 5 and 6. It was found that:

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E071/E135

The Influence of Carbon and Oxygen on the Surface Tension of Liquid Iron

- 1) The surface tension of liquid iron at 1550 °C is 1865 dyn/cm. The temperature coefficient of surface tension  $ds/dt = - 0.49$  dyn/cm °C.
- 2) At 1550 °C carbon has no substantial influence on the surface tension of iron. With increasing carbon content from 0.002 to 4.15% the surface tension decreases from 1865 to 1788 dyn/cm. At temperatures below 1520 °C the temperature coefficient of surface tension of liquid iron containing from 2.0 to 4.2% carbon decreases from 1.0 to 0.42 dyn/cm °C. At about 1550 °C polytherms of solutions of carbon and iron reach a maximum. At the same degree of overheating ( $\Delta t = 20$  °C) of solutions of iron and carbon, an increase in the concentration of carbon has a substantial influence on the surface tension of iron (Fig 6).
- 3) Oxygen, as a highly surface active element, reduces considerably the surface tension of iron. With increasing concentration of oxygen from 0.001 to 0.184% the surface tension of iron decreases from 1865 to

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E071/E135

The Influence of Carbon and Oxygen on the Surface Tension of Liquid Iron

1056 dyn/cm.

4) The maximum adsorption of oxygen amounts to  $23.4 \times 10^{-10}$  mol/cm<sup>2</sup> at an oxygen concentration of about 0.05%. The authors consider that a mixture of ferrous oxide and ions of oxygen with a predominance of the former is present in the surface layer. 4

There are 6 figures, 1 table and 14 references, of which 9 are Soviet, 4 English and 1 German.

SUBMITTED: October 29, 1959

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69653

S/180/60/000/02/007/028

E071/E135

12.1100

AUTHORS: Van Tszin-Tan, Karasev, R.A., and Samarin, A.M. (Moscow)

TITLE: Surface Tension of Molten Iron-Manganese<sup>1</sup> and Iron-Sulphur Alloys

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1960, Nr 2, pp 49-52 (USSR)

ABSTRACT: Results of measurements of surface tension of melts in the system Fe - S and Fe - Mn are reported. The measurements were done using the method (shape of the drop) and apparatus previously described (Ref 2). High purity iron (0.001% O; 0.001-0.002% C; 0.002% S; less than 0.002% N, Cu, Si and traces of Ni), electrolytic manganese (0.05% S, 0.06% C) and chemically pure sulphur were used for the preparation of alloys. Melting of the specimens was done in an atmosphere of purified hydrogen which was then removed from the metal by heating at 600 °C in a vacuo of  $1.10^{-5}$  mm Hg. Surface tension values of iron-manganese melts are given in Table 1 and Fig 1, and of iron-sulphur melts in Table 2 and Figs 2 and 3. It was found that the presence of manganese in

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E071/E135

Surface Tension of Molten Iron-Manganese and Iron-Sulphur Alloys

liquid iron reduces its surface tension from 1865 dyn/cm (for pure metal) to 1372 (for iron containing 6.15% of manganese). Unlike the findings of other authors (Refs 4, 5, 6) the dependence of the surface tension on concentration was found to be uniform (Fig 1). The presence of sulphur in liquid iron causes a sharp decrease of surface tension: from 1865 dyn/cm for pure iron to 702 dyn/cm for iron containing 3.44% of sulphur. In the region of very dilute solutions the influence of sulphur on surface tension of liquid iron is higher than that of oxygen. The temperature coefficient of the surface tension of Fe-S melts is positive and equals 0.34 dyn/cm °C. The maximum adsorption of sulphur in liquid iron amounts to  $14.60 \cdot 10^{-10}$  mol/cm<sup>2</sup> at a concentration of sulphur of 0.03%. Thus at the maximum adsorption the surface area per molecule in the adsorption layer amounts to  $11.38 \cdot 10^{-16}$  cm<sup>2</sup>. Comparing this figure with ionic dimensions of particles of elemental sulphur ( $10.41 \cdot 10^{-16}$  cm<sup>2</sup>) and iron sulphide ( $11.56 \cdot 10^{-16}$  cm<sup>2</sup>), it

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Surface Tension of Molten Iron-Manganese and Iron-Sulphur Alloys

can be assumed that the surface layer is filled mainly  
with particles of iron sulphide.

There are 3 figures, 2 tables and 8 Soviet references. ✓

SUBMITTED: December 21, 1959

Card 3/3

VAN TSZIN-TAN [Wang Ching-t'ang] (Moskva); KARASEV, R.A. (Moskva); SAMARIN,  
A.M. (Moskva); SHALIMOV, A.G. (Moskva)

Surface tension of molten iron - sulfur - carbon, iron - manganese -  
sulfur, iron - manganese - carbon. Izv. AN SSSR. Otd. tekhn. nauk.  
Met. i topl. no.1:15-19 Ja-n' '61. (EINA 14:2)  
(Surface tension) (Liquid metals)

S/137/62/000/005/002/150  
A006/A101

AUTHORS: Wang Ching-t'ang, Karasev, R. A., Samarin, A. M.

TITLE: The effect of impurities on surface tension of pure iron

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 5, 1962, 8, abstract 5A47  
(V sb. "Fiz.-khim. osnovy proiz-va stali", Moscow, AN SSSR, 1961, 106-111)

TEXT: The authors employed the method of taking photographs of a lying drop on a processed alumina backing at steel founding temperatures in purified He atmosphere to investigate  $\sigma_{Fe}$ , containing (in %): O 0.001, C 0.001 - 0.002, S 0.002, N < 0.002, Cu and Ni - traces; and the effect upon  $\sigma_{Fe}$  of C and O.  $\sigma_{Fe}$  at 1,550°C is 1,865 dyne/cm. Temperature coefficient  $d\sigma_{Fe}/dT = -0.49$  dyne/cm. degree. At 1,550°C C has no particular effect on  $\sigma_{Fe}$ . With a higher C content, raised from 0.002 to 4.15%,  $\sigma$  decreases from 1,865 to 1,788 dyne/cm. With an O content, increased from 0.001 to 0.184%,  $\sigma$  decreases from 1,865 to 1,056 dyne/cm. Maximum O adsorption is  $23.4 \cdot 10^{-10}$  mole/cm<sup>2</sup> at an O content of about 0.05%. The hypothesis is advanced, that there is a mixture of FeO and O ions in the surface layer, FeO being prevalent.  
[Abstracter's note: Complete translation]

T. Kolesnikova

Card 1/1



BURTSEV, V.T. (Moskva); KARASEV, R.A. (Moskva); SAMARIN, A.M. (Moskva)

Sulfur vapor pressure in contact with iron - sulfur melts. Izv.  
AN SSSR. Otd. tekhn. nauk. Met. i topl. no.2:42-48 Mr-Apr '62.  
(MIRA 15:4)

(Vapor pressure--Measurement) (Desulfuration)

BURTSEV, V. T. (Moskva); KARASEV, R. A. (Moskva); SAMARIN, A. M. (Moskva)

Mechanism of evaporation and the pressure of sulfur vapors  
on iron-carbon-sulfur melts. Izv. AN SSSR. Otd. tekhn. nauk.  
Met. i topl. no.6:32-36 N-D '62. (MIRA 16:1)

(Iron—Metallurgy) (Desulfuration)  
(Vapor pressure)

BURTSEV, V.T.; KARASEV, R.A.; POBEGAYLO, V.M.; SAMARIN, A.M.; KHEBNIKOV, A.Ye.

Desulfuration of liquid iron in vacuum. Izv. vys. ucheb. zav.;  
chern. met. 5 no.5:86-93 '62. (MIRA 15:6)

1. Institut metallurgii im. Baykova.  
(Iron-metallurgy) (Desulfuration)

BURTSEV, V.T. (Moskva); KARASEV, R.A. (Moskva;; POLYAKOV, A.Yu. (Moskva);  
SAMARIN, A.M. (Moskva)

Investigating with the help of a mass-spectrometer, the products  
of the decarburization reaction during the smelting of iron in  
vacuum. Izv. AN SSSR. Met. no.1:55-58 Ja-F '65. (MIRA 18:5)

KARASEV, S.A.

Activity of sugar-beet invertase under juice production temperature  
conditions (from "Zucker," no.10, 1962). Sakh.prom. 37 no.2:69(149)  
F '63. (MIRA 16:5)

(Sugar—Inversion)

KARASEV, B.A.

Hydrazine additives in the preparation of feedwater. Sakh.  
prom. 37 no.11:73 N '63. (MIRA 16:11)

MALAFEYeva, Ye.P.; MERKUR'YEVA, Ye.D.; KARASEV, S.M.

Experience in the production of yarn and filter cloth from  
nitron. Tekst. prom. 24 no.8:34-37 Ag '64.

(MIRA 17:10)

1. Zaveduyushchiy fabrikoy No.1 Yaroslavskogo kombinata  
tekhnicheskikh tkaney "Krasnyy Perekop" (for Malafeyeva).
2. Nachal'nik laboratorii fabriki No.1 Yaroslavskogo kombinata  
tekhnicheskikh tkaney "Krasnyy Perekop" (for Merkur'yeva).
3. Nachal'nik tekhnicheskogo otdela Yaroslavskogo kombinata  
tekhnicheskikh tkaney "Krasnyy Perekop" (for Karasev).

ZAYCHENKO, Ye. N.; KARASEV, S. S.

Pickup for measuring the number of revolutions of the rotor  
of a turbosupercharger. Avt. prom. 28 no.9:44-45 S '62.  
(MIRA 15:10)

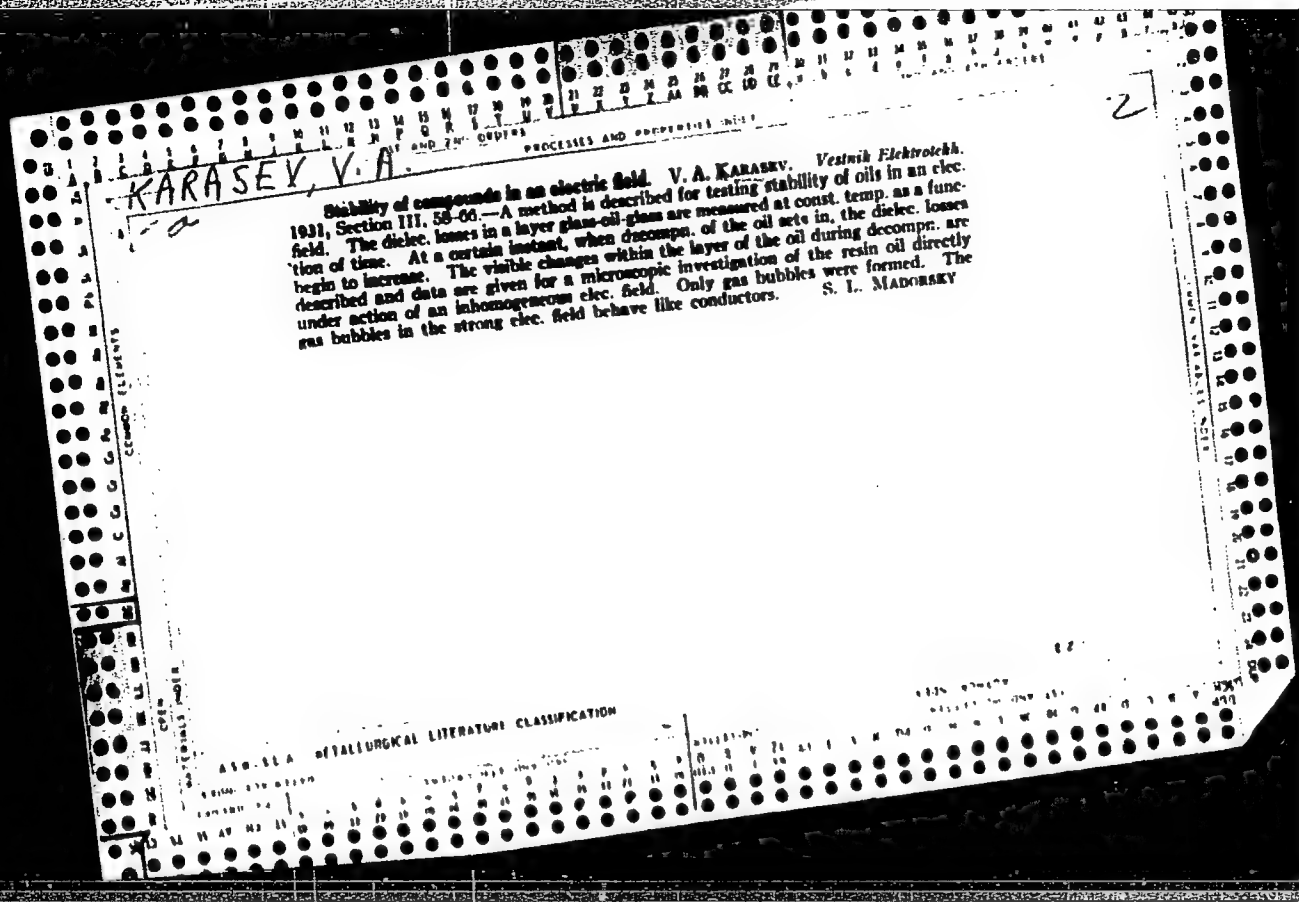
1. Gosudarstvennyy soyuznyy ordena Trudovogo Krasnogo Znameni  
nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut.

(Automobiles—Engines—Superchargers)



KARASEV, V.A., doktor tekhn. nauk, prof. (Moskva)

Calculation of dynamic operating modes of electromagnets.  
Elektrichestvo no.1:39-44 Ja '64. (MIRA 17:6)



[illegible]

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*B*

**New System of Nonincandescent Luminescent Lighting for Mineshafts and Chemical Industry.** (In Russian.) V. A. Karasev. *Elektrichestvo* (Electricity), No. 12, Dec. 1949, p. 10-14.

Describes above system, particularly adaptable for eliminating the danger of explosion in shafts and in chemical industries in which explosive gases may be present. It is characterized by utilization of the ferro-magnetic phenomenon of resonance on the third harmonic. Theoretical bases of this system are discussed. Data are tabulated and charted. Importance of this system is emphasized.

*PROF. DR. Tech. Sci.  
All-Union Power Eng. INST. IM. LENIN*

ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION

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<p>1866. Starting and supply equipment for fluorescent lamps. V. A. KARANOV. <i>Elektrichesk, No. 12, 50-4</i> (Dec., 1950) <i>In Russian</i>.</p> <p>The various systems are described and the theory of the ignition process is given in its simplest form. Starter-less systems are preferred. An efficient starterless system described uses an autotransformer circuit, in which the primary and secondary windings are placed on separate limbs, provided with a magnetic shunt with controllable gap. The primary cost of this apparatus is 75% higher than the usual choke circuit, but is compensated for by more economical operation and increased life of the lamps. Tabulated test results confirm this.</p> <p>B. F. KRAUS</p>																																																																																																																																																																																																															
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USSR/Electricity - Transformers

NOV 52

"Calculation of Overvoltages in Transformer Windings," Prof V. A. Karasev, Dr Tech Sci, and Cand Tech Sci A. V. Sklyanin, Ivanovo Power Eng Inst

"Elektrichestvo" No 11, pp 46-50

Cites results of research on magnetic and electrostatic linkages between elements of transformer windings and on overvoltages in them under pulse and h-f operation. Works out method for exptl investigation of mutual induction

240T65

functions. Exptl data support theory of electro-magnetic processes in windings published in 1946 in book by Karasev. Submitted 31 May 52.

240T65

KARASEV, V. A.

Karasev, V.A.

KARASEV, V.A., inzhener.

"Safety engineering studies in enterorises" by N.P.Slavinskeye.  
Reviewed by V.A.Karasev. Bezop.truda v prom. 1 no.9:38 S '57.  
(MIFA 10:9)  
(Safety museums)

BRASLAVSKIY, D.A., kand.tekhn.nauk; GOL'DFARB, L.S., doktor tekhn.nauk;  
 GUZENKO, A.I., kand.tekhn.nauk; DMITRIYEV, K.Ye., kand.tekhn.nauk;  
 KALASHNIKOV, V.A., inzh.; KLOBUKOV, P.P., kand.tekhn.nauk; KLOB-  
 NIKIN, P.F., kand.tekhn.nauk; KRASSOV, I.M., kand.tekhn.nauk;  
 MEL'POR, D.S., doktor tekhn.nauk; PETROV, V.V., kand.tekhn.nauk;  
 ROZENBLAT, M.A., doktor tekhn.nauk; RUZSKIY, Yu.Ye., kand.tekhn.  
 nauk; SADOVSKIY, B.D., kand.tekhn.nauk; SOKOLOV, A.A., kand.tekhn.  
 nauk; TITOV, V.K., kand.tekhn.nauk; ULANOV, G.M., kand.tekhn.nauk;  
 FILIPCHUK, Ye.V., kand.tekhn.nauk; KHARYBIN, A.Ye., kand.tekhn.  
 nauk; KHOKHLOV, V.A., kand.tekhn.nauk; GALTEYEV, F.F., kand.tekhn.  
 nauk, retsenzent; KARASEV, V.A., doktor tekhn.nauk, retsenzent;  
 RAGOZIN, Yu.D., kand.tekhn.nauk, retsenzent; REYNGOL'D, Yu.R., inzh.,  
 retsenzent; RYABOV, B.A., doktor tekhn.nauk, retsenzent; SAYBEL',  
 A.G., kand.tekhn.nauk, retsenzent; SHEVYAKOV, A.A., kand.tekhn.nauk,  
 retsenzent; SOLODOVNIKOV, V.V., prof., doktor tekhn.nauk, red.;  
 VITENBERG, I.M., kand.tekhn.nauk, nauchnyy red.; MOLDAVER, A.I.,  
 kand.tekhn.nauk, nauchnyy red.; POLYAKOV, G.F., red.izd-va; AKIMOVA,  
 A.G., red.izd-va; KONOVALOV, G.M., red.izd-va; TIKHONOV, A.Ya., tekhn.  
 red.; SOKOLOVA, T.F., tekhn.red.

[Fundamentals of automatic control] Osnovy avtomaticheskogo reguliro-  
 vania. Vol.2. [Elements of automatic control systems] Elementy sistem  
 avtomaticheskogo regulirovaniia. Pt.1. [Sensing devices, amplifiers,  
 and actuators] Chuvstvitel'nye, usilitel'nye i ispolnitel'nye elementy.  
 Moskva, Gos.nauchno-tekhn.izd-vo mashinostroitel'noy lit-ry. 1959. 722 p.  
 (Automatic control) (MIRA 12:4)

(Electronic apparatus and appliances) (Electronic calculating machines)



KARASEV, V., tokar'-naladchik, Geroy Sotsialisticheskogo Truda

Innovators' council attached to the regional economic council.  
Sots.trud 6 no.3:103-106 Mr.'61. (MIRA 14:3)

1. Kirovskiy zavod, predsedatel' Leningradskogo soveta novatorov.  
(Leningrad economic region—Socialist competition)  
(Leningrad economic region—Efficiency, Industrial)

KARASEV, V.A.; SEMAKOV, G.I.

Use of containers for transporting mail on railroad cars.  
Vest. svyazi 21 no.9:26-27 S '61. (MIRA 14:9)

1. Zamestitel' nachal'nika Ivanovskogo oblastnogo upravleniya svyazi (for Karasev).
2. Nachal'nik otdeleniya perevozki pochty na Yaroslavskom vokzale Moskvy (for Semakov).  
(Postal service)

KARASEV, V.A.

Experience in the mechanization of work in postal enterprises. Vest.  
svyazi 24 no.3:19-20 Mr '64. (MIRA 17:4)

1. Zamestitel' nachal'nika Ivanovskogo oblastnogo upravleniya.  
svyazi.

NEFEDOV, Aleksandr Yakovlevich; KARASEV, Vladimir Alekseyevich;  
NIKOLAYEV, B.N., otv. red.; SAKHAROVA, Ye.D., red.

[Mechanization of postal enterprises in Ivanovo Province]  
Mekhanizatsiia predpriatii pochtovoi svyazi Ivanovskoi  
oblasti. Moskva, Sviaz'izdat, 1963. 15 p.  
(MIRA 17:9)

1. Nachal'nik oblastnogo upravleniya svyazi Ivanovskoy  
oblasti (for Nefedov). 2. Zamestitel' nachal'nika oblast-  
nogo upravleniya svyazi Ivanovskoy oblasti (for Karasev)

KARASEV, V.I., doktor tekhn.nauk (Moskva)

Calculation of the movement of electromagnets under the alternating  
force of a counteraction. Elektrichestvo no.10:72-75 0 '65.

(MIRA 18:10)

KARASEV, V., Geory Sotsialisticheskogo Truda

How to eliminate primitive methods? Izobr. i rats. no.7:4-5  
(MIRA 14:6)

--Jl '61.

(Technological innovations)

KARASEV, V.A., doktor tekhn.nauk, prof. (Moskva)

Effect of eddy currents on transients in electromagnets. (MIRA 16:10)  
Elektrichestvo no.9:33-37 S '63.

KARASHEV, Vasily Ivanovich, kand.ist.nauk; YERSHOV, V.V., kand.ist.nauk,  
red. [deceased]; AKHUNOV, I.I., red.; BAKHTIYAROV, A., tekhn.red.

[Struggle of the Communist Party to restore and improve agriculture  
in Uzbekistan during the postwar years] Bor'ba Kommunisticheskoi  
partii za vosstanovlenie i pod'em sel'skogo khoziaistva Uzbekistana  
(poslevoennye gody). Pod red. V.V.Yershova. Tashkent, Gos.izd-vo  
Uzbekskoi SSR, 1957. 136 p. (MIRA 11:5)  
(Uzbekistan--Agriculture)



KORITS, S.Ya., inzh.; KARASEV, V.I., inzh.

Using the hydrostatic level to repeat results of factory welding of the PVK-150 turbine in assembling a State Regional Electric Power Plant. Energ. stroi. no.3:21-24 (13), 1960. (MIRA 14:9)

1. Moskovskiy filial instituta "Orgenergostroy".  
(Turbines--Welding)

KARASEV, Valentin Ivanovich

"Continuous Transforming Interbreeding in the Raising of Hybrid  
Finewooled-Coarsewooled Sheep";

disertation for the degree of Doctor of Agricultural Sciences  
(awarded by the Timiryazev Agricultural Academy, 1962)

(Izvestiya Timiryazevskoy Sel'skokhozyaystvennoy Akademii, Moscow, No. 2,  
1963, pp 232-236)

KARASEV, V. K.

"Method of Working Viscose Staple Fabric on a Sewing Machine."  
Cand Tech Sci, Moscow Technological Inst of Light Industry imeni  
L. M. Kaganovich, Min Higher Education USSR, Moscow, 1954. (KL,  
No 10, Mar 55)

SO: Sum. No. 670, 29 Sep 55-Survey of Scientific and Technical  
Dissertations Defended at USSR Higher Educational Institutions (15)

KARASEV, V.K., kand.tekhn.nauk

Effect of the diameter of needle-plate holes on the damageability  
of textile fabrics. Izv. vys.ucheb.zav.; tekhn.leg. prom. no.1:123-128  
'58. (MIRA 11:6)

Leningradskiy tekstil'nyy institut im. S.M. Kirova.  
(Sewing machines--Testing)

KARASEV, V.K., kand.tekhn.nauk

Effect of techniques used in fashioning edges of clothing on their stretchability. Izv. vys. ucheb. zav.; tekhn. leg. prom. no.3: (MIRA 11:10)  
105-110 '58.

1. Leningradskiy tekstil'nyy institut imeni S.M. Kirova.  
(Tailoring)

SUKHAREV, M.I., kand.tekhn.nauk; KARASEV, V.K., kand.tekh.nauk; PAVLOV, A.I.;  
kand.tekhn.nauk. dots.; VADIMOVICH, I.I., kand.tekhn.nauk, dots.  
KOVALSKIY, A.G., inzh.; ZORUK, V.L., inzh.

"Fabrics for the clothing industry" by T.A.Modestova, L.N.  
Flerova, B.A.Buzov. Reviewed by M.I.Sukharev and others. Izv.  
vys.ucheb.zav.; tekhnolog.prom. no.2:111-116 '59.  
(MIRA 12:10)

1. Leningradskiy tekstil'nyy institut im. S.M.Kirova (for  
Sukharev, Karasev). 2. Kiyevskiy tekhnologicheskii institut  
legkoy promyshlennosti (for Pavlov, Vadimovich, Koval'skiy  
Zoruk).

(Textile fabrics) (Clothing industry) (Modestova, T.A.)  
(Fleurova, L.N.) (Buzov, B.A.)

KARASEV, V.K., kand.tekhn.nauk

Damaging fabrics with sewing machine needles. Izv.vys.ucheb.  
zav.; tekhn.prom. no.3:79-83 '59. (MIRA 12:12)

1. Leningradskiy tekstil'nyy institut im.S.M.Kirova. Rekomen-  
dovana kafedroy shveytnogo proizvodstva.  
(Sewing machines)

RUSAKAV, Sergey Ivanovich; TRUKHAN, Germadiy Lukich; EPPEL', Sergey  
Sergeyevich; POPKOV, Vasil'y Ivanovich; VORONIN, G.M., inzh.,  
retsenzent; KARASEV, V.K., dots., retsenzent; ANTIPOVA, A.I.,  
prepod., retsenzent; SHANG'GINA, V.F., kand. tekhn. nauk,  
retsenzent; MINAYEVA, T.M., red.; SHAPENKOV, T.A., tekhn. red.

[Technology of clothing manufacture] Tekhnologiya shveinogo  
proizvodstva. Izd.2., perer. i dop. Moskva, Gos. izd-vo  
"Rostekhzdat, 1961. 670 p. (MIRA 15:2)  
(Clothing industry)



KARASEV, V.K.

Ways of improving the training of specialist engineers in the  
clothing industry. Shvein.prom. no.2:25-26 Mr-Apr '62.

(MIRA 15:4)

(Clothing industry) (Vocational education)

KRASNYANSKAYA, Tamara Mikhaylovna, kand. ekon. nauk; KARASEV, V.K.,  
kand. tekhn. nauk, red.; FREGER, D.P., red.izd-va;  
BELOGUROVA, I.A., tekhn. red.

[Methodology of the analysis of fabric utilization in cloth-  
ing manufacture]Metodika analiza ispol'zovaniia tkani v  
shveinom proizvodstve. Leningrad, 1962. 33 p.  
(MIRA 15:11)

(Clothing industry--Management)  
(Garment cutting)

KARASEV, Vyacheslav Konstantinovich, kand. tekhn. nauk; SHAN'GINA,  
Vladilena Fedorovna, kand. tekhn. nauk; KRASN'YANSKAYA, T.M.,  
red.; FREGER, D.P., red.izd-va; BELOGUROVA, I.A., tekhn.red.

[Analyzing fabric cutting by series] Analiz seriinogo raskroia  
tkanei; iz opyta raboty shvein'nykh fabrik. Leningrad, 1962. 20 p.  
(Leningradskii dom nauchno-tekhnicheskoi propagandy. Obmen pe-  
redovym opytom. Seriya: Shveinaia promyshlennost', no.2)

(MIRA 16:3)

(Garment cutting)

SHAN'GINA, Vladilena Fedorovna, kand. tekhn. nauk; NIKHAYLOVA  
Mariya Sergeevna; KARASEV, V.K., kand. tekhn. nauk,  
red.

[Manufacture of outerwear clothing from textile fabrics  
lined with porolon and wool] Izgotovlenie verkhnei odezhdy  
iz tekstil'nykh materialov, dublirovannykh porolonom i  
sherst'iu. Leningrad, 1964. 17 p. (MIRA 111)

SINYAKOV, Aleksandr Borisovich; TSAREV, Nikolay Ivanovich;  
KARASEV, V.K., red.

[Technology of the processing of men's suits made from fabrics containing over 50% of lavsan fibers; practices of the Leningrad House of Fashion Design] Tekhnologiya obrabotki muzhskikh kostiumov iz tkanei, sodержashchikh svyshe 50% volokna lavsan; opyt leningradskogo Doma modelei. Leningrad, 1964. 26 p. (MIRA 18:2)

DVORETSKIY, Igor' Vasil'yevich; LOKOT', Boris Stepanovich;  
KARASEV, V.K., red.

[Manufacture of rainwear from polyvinyl chloride films]  
Proizvodstvo plashchei iz polivinilkhloridnoi plenki.  
Leningrad, 1965. 21 p. (MIRA 18:7)

KARASEV, V.K.; KATSEV, P.G.; DEMIDOV, A.L.; SOLODOVNIK, S.F.

Inventors suggest. Mashinostroitel' no.2:30-31 F '65.

(MIRA 18:3)

SINYAKOV, Aleksandr Borisovich; ANTIPOVA, Anisiya Ivanovna;  
KARASEVA, Nina Nikolayevna; AVER'YANOVA, T.N., inzh.,  
retsenzent; VIDANOVA, R.I., prepodav., retsenzent;  
GUR'YANOVA, N.I., prepodav., retsenzent; DATNER, M.G.,  
inzh., retsenzent; KARASEV, V.K., kand. tekhn. nauk,  
nauchn. red.; GABOVA, D.M., red.

[Technology of clothing manufacture] Tekhnologiya shvel-  
nogo proizvodstva. Moskva, Legkaya industriia, 1965. 409 p.  
(MIRA 18:7)



KARASEV, V.M., inzh.

Use of plastics on the atomic icebreaker "Lenin." Sudostroenie  
27 no.8:58-60 Ag '61. (MIRA 14:9)  
(Lenin (Atomic ship)) (Plastics)

ALAYEVA, T.I.; KARASEV, V.M.

Determining the quality factor of a volume resonator. Prib.i  
tekh.eksp. 6 no.5:183-185 S-0 '61. (MIRA 14:10)

1. Institut fiziki vysokikh davleniy AN SSSR.  
(Pulse techniques (Electronics))

KARASEV, V.N., inzh.; MOSHONKIN, N.P., kand. ekonom. nauk

Make wider use of the logging trucks of the Komi Lumber Industry.  
Mekh. i avtom. proizvod. 18 no.10:20-21 O '64. (MIRA 17:12)

KARASEV, V. P.

НЕМЕТАЛЛИЧЕСКИЕ ВКЛЮЧЕНИЯ СТАЛИ

С.И.Павлов	Остатки включений стали от турбулентности
Г.Ф.Косовский	Остатки включений
С.Е.Волков	Важная проблема раскисления стали в вакуумной печи на процесс ее декарбурнизации.
А.М.Семарин	
Д.К.Бутылов	Важная проблема на обособление сорти в структуру литейной стали.
Л.М.Мельников	
С.Т.Ростовский	Особенности неметаллических включений в вакуумной раскисленной стали.
П.И.Туровский	
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В.А.Уразов	Важность в неметаллической структуре, содержащей тот же.
Ю.Т.Лукин	
Д.М.Лукин	Важность в неметаллической структуре, содержащей сорти в общей.
О.В.Димит	
Е.В.Корень	
А.И.Косов	Особенности раскисления с процессом электролиза стали.
С.Г.Волков	Разработка и внедрение новой технологии выплавки неметаллической стали.
П.М.Волков	
В.П.Косов	Важность этой проблемы раскисления и метода.
П.И.Лукин	

report submitted for the 5th Physical Chemical Conference on Steel Production, Moscow-- 30 Jan 1959

KARASEV, V.P.

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PHASE I BOOK EXPLOITATION

SOV/5411

Konferentsiya po fiziko-khimicheskim osnovam proizvodstva stali. 5th,  
Moscow, 1959.

Fiziko-khimicheskiye osnovy proizvodstva stali; trudy konferentsii  
(Physicochemical Bases of Steel Making; Transactions of the  
Fifth Conference on the Physicochemical Bases of Steelmaking)  
Moscow, Metallurgizdat, 1961. 512 p. Errata slip inserted.  
3,700 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut metallurgii imeni  
A. A. Baykova.

Responsible Ed.: A. M. Samarin, Corresponding Member, Academy  
of Sciences USSR; Ed. of Publishing House: Ya. D. Rozentsveyg.  
Tech. Ed.: V. V. Mikhaylova.

Card 1/18

115

Physicochemical Bases of (Cont.)

SOV/5411

**PURPOSE:** This collection of articles is intended for engineers and technicians of metallurgical and machine-building plants, senior students of schools of higher education, staff members of design bureaus and planning institutes, and scientific research workers.

**COVERAGE:** The collection contains reports presented at the fifth annual convention devoted to the review of the physicochemical bases of the steelmaking process. These reports deal with problems of the mechanism and kinetics of reactions taking place in the molten metal in steelmaking furnaces. The following are also discussed: problems involved in the production of alloyed steel, the structure of the ingot, the mechanism of solidification, and the converter steelmaking process. The articles contain conclusions drawn from the results of experimental studies, and are accompanied by references of which most are Soviet.

Card 2/16

Physicochemical Bases of (Cont.)

SOV/5411

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S/137/61/000/012/001/149  
A006/A101

AUTHORS: Ageyev, P.Ya., Karasev, V.P., Shkarednyy, M.V.

TITLE: On the problem of deoxidizing steel with aluminum

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 12, -1961, 15, abstract  
12A84 ("Nauchno-tekhn. inform. byul. Leningr. politekhn. in-t",  
1960, no. 11, 3 - 6)

TEXT: The simultaneous changes of O and Al content during deoxidation of liquid Fe with aluminum were investigated in a 5 kg laboratory induction furnace with magnesite lining. Melting and holding of the liquid metal were performed in pure argon atmosphere. An amount of 0.3% Al was added to the metal during thorough stirring of the pool with a quartz rod. In all heats a sharp decrease of the O content in the metal was observed immediately after the addition of Al. At an initial O content as high as 0.03% in experimental heats, only about 10% of the Al added are eliminated due to the reduced concentration of O in the metal. Losses of Al on account of Al oxidation on the pool surface did not take place; at such an Al-concentration, evaporation of Al is negligible. Losses of 40% Al, determined during the investigation, are considered to be caused by

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On the problem of deoxidizing steel with aluminum

S/137/61/000/012/001/149  
A006/A101

the interaction of Al with Fe oxides of the active layer of the furnace lining. Within the first 5 - 7 minutes of holding the metal, the total O content is reduced to minimum values; during longer holding it does not change or increases slightly; this occurs on account of levelling the rate of O supply and elimination from the metal. Establishing the constancy of the total O content in the metal at this moment does not correspond to an equilibrium state, since the Al concentration varies continuously. The equilibrium state begins after more than 15 minutes. The equilibrium constant of the deoxidation reaction of Fe with aluminum in a magnesite crucible is estimated to be  $1 \cdot 10^{-11}$  -  $0.5 \cdot 10^{-11}$ .

Yu. Nechkin

[Abstracter's note: Complete translation]

Card 2/2

KARASEV, V.P.; AGEYEV, P.Ya.

Oxygen removal from molten iron deoxidized by aluminum. Izv. vys.  
ucheb. zav.; Chern. met. 6 no.7:83-90 '63. (MIRA 16:9)

1. Leningradskiy politekhnicheskii institut.  
(Steel—Metallurgy)

KARASEV, V.P.

Oxygen behavior during steel deoxidation in arc furnaces. Trudy  
IPI no.253:49-57 '55.

(MIRA 18:8

ACC NR: AP6034100

SOURCE CODE: UR/0089/66/021/004/0294/0294

AUTHOR: Kolyada, V. M.; Karasev, V. S.

ORG: none

TITLE: Calorimetric dosimetry in a nuclear reactor

SOURCE: Atomnaya energiya, v. 21, no. 4, 1966, 294

TOPIC TAGS: nuclear radiation, thermal radiation detector, calorimetry, radiation dosimetry, nuclear reactor technology

ABSTRACT: This is a summary of article No. 108/3687, submitted to the editor and filed, but not published in full. The authors point out the limitations of the use of ionization, chemical scintillation, and other dosimetry methods for intense radiation fluxes, and the advantages inherent in recently developed calorimetric means. They therefore review briefly methods and instruments for calorimetric dosimetry. These methods are subdivided, depending on the method of determining the absorbed energy, into three groups - adiabatic, kinetic, and isothermal. An attempt is made to compare the described calorimetric methods and instruments, to disclose their advantages and disadvantages, and to determine their field of application. The materials in the paper will help scientific-technical workers engaged in reactor research to estimate the possibility of calorimetric instruments for use or for their further perfection.

SUB CODE: 18/ SUBM DATE: 15Apr66

Card 1/1

UDC: 614.8: 539.12.08: 621.039.5

ACC NR: AP6036759

(N)

SOURCE CODE: UR/0020/66/171/001/0084/0087

AUTHOR: Karasev, V. S.; Aleksandrov, A. P. (Academician)

ORG: none

TITLE: Vacancy mechanism of the accelerated failure of materials at irradiation under stress

SOURCE: AN SSSR. Doklady, v. 171, no. 1, 1966, 84-87

TOPIC TAGS: chromium nickel steel, austenitic steel, heat resistant steel, neutron irradiation, steel irradiation, steel failure, failure mechanism, irradiation effect

ABSTRACT: A theoretical study is presented of the effect of irradiation with fast neutrons on the processes of deformation and failure of metals. Equations are derived which show that coagulation of vacancies into complexes plays a significant part in the process of deformation and failure. Stress-rupture tests with a chromium-nickel heat-resistant steel (20% Cr, 28% Ni) showed that irradiation increased the creep rate and accelerated steel failure. The specimens strained to rupture in the reactor failed in a brittle manner without necking and with numerous cracks along the grain boundaries. Figure 1 shows the relative decrease in the rupture life of steel subjected to stress-rupture tests and irradiation at various temperatures under a constant load:  $\xi = \tau_0/\tau_r$ , where  $\tau_0$  is the rupture life of original steel and  $\tau_r$  is the rupture life of irradiated steel. It is concluded that

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UDC: 539.12.04

ACC NR: AP6036759

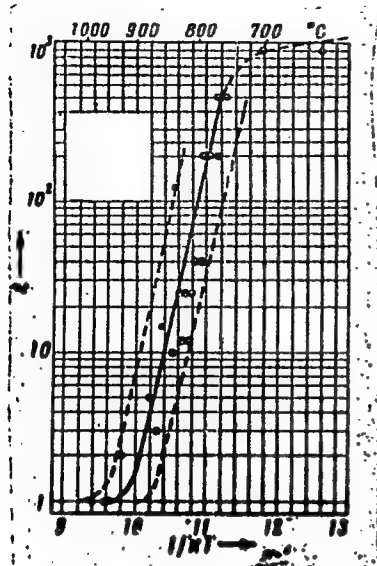


Fig. 1. Decrease in rupture life versus inverse temperature

the determination of mechanical characteristics of materials after instead of during irradiation may lead to significant errors in estimating the service life of nuclear

Cord 2/3

ACC NR: AP6036759

reactor parts located in fields of intense neutron radiation at temperatures higher than 0.4 of the melting temperature. Ye. V. Lyapin, Yu. P. Mel'nik-Kutsin and V. I. Grisenko are thanked for their assistance in the work. Orig. art. has: 4 figures and 8 formulas.

SUB CODE: 11/ SUBM DATE: 28Jul65/ ORIG REF: 009/ OTH REF: 006/ ATD PRESS: 5107

Card 3/3

KNISHNIK, Ye.I., inzh., KARASOV, V.S., inzh.

Systems for studying reactor radiation on the electrical characteristics of liquid dielectrics. Energ. i elektrotekh. prom. no.1:42-44. Jan-Mar '65. (NSRA 13:5)



L 6468-66 EWT(m)/EPF(c)/ETC/EPF(n)-2/ENG(m) WW/DM  
ACCESSION NR: AP5019818

UR/0089/65/019/001/0074/0075  
621.039.55:536.629

AUTHOR: Karasev, V. S.; Kolyada, V. M.

TITLE: Calorimetric determination of absorbed dose of reactor ionizing radiation by the method of compensation of the heat release in the investigated sample

SOURCE: Atomnaya energiya, v. 19, no. 1, 1965, 74-75

TOPIC TAGS: ionizing radiation, nuclear reactor characteristic, radiation dosimetry, calorimetry/ VVR M, RFT

ABSTRACT: The authors point out that earlier calorimetric methods could not be used in high intensity water-moderated water-cooled reactors (such as VVR-M) because of the excessive heat released in the samples. The method proposed makes possible high-accuracy measurements of high power absorbed doses without involving the thermophysical constants of the substances. It is based on compensating electrically for the heat released in the investigated sample. A diagram of the calorimeter is shown in Fig. 1 of the Enclosure. In the absence of the sample, the energy of the ionizing radiation is equal to the electric power of the calorimeter heating if the calorimeter surface temperature is the same with and without the sample. The average experimental accuracy of the calorimeter at operating temperatures was 0.18 mv/watt. The accuracy claimed for this method is

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ACCESSION NR: AP5019818

3--5%. Tests on samples of lead, tin, and steel yielded for the absorbed dose power at 10 MW reactor rating values 0.665, 0.509, and 0.425 Mrad/sec, respectively. Comparison with earlier data on the RFT (physical and technical research) reactor (N. F. Pravdyuk et al., *Atomnaya energiya* v. 9, 380, 1960) shows that the total absorption dose in the VVR-M reactor is much higher than in the RFT reactor at the same neutron flux, owing to the presence of neutron-absorbing graphite blocks in the RFT reactor. Orig. art. has: 1 figure and 2 tables. <sup>15</sup>

ASSOCIATION: none

SUBMITTED: 15Jul64

ENCL: 01

SUB CODE: NP

NR REF SOV: 000

OTHER: 000

Card 2/3

L 6468-66

ACCESSION NR: AP5019818

ENCLOSURE: 01

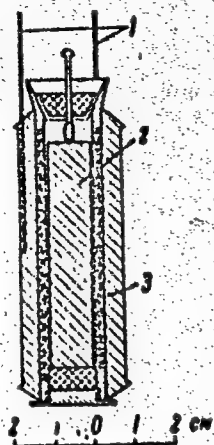


Fig. 1. Diagram of calorimeter

- 1 - Thermocouples,
- 2 - sample,
- 3 - heater.

OC

Card 3/3

KARASEV, V.S.; PUDOMENKO, E.S.; SHYSHEKINA, N.A.

Apparatus for measuring the viscosity of liquids within a  
wide temperature range, Tsvet. i eksper. khim. 1 no.4:551-553  
1965. (MIRA 18:10)

1. Institut fiziki AN UkrSSR, Kyiv.

L 28388-66 EWT(m)

ACC NR: AP6001797

SOURCE CODE: UR/0089/65/019/006/0532/0532

AUTHOR: Kolyada, V. M.; Karasev, V. S.

ORG: None

TITLE: Calorimetric dosimetry of gamma radiations from nuclear reactor

SOURCE: Atomnaya energiya, v. 19, no. 6, 1965, 532

TOPIC TAGS: nuclear reactor, gamma detection, radiation dosimetry, calorimetry

ABSTRACT: An abbreviated version of the original paper is presented dealing with the application of calorimetric method to measurements of gamma-ray doses. The study was related to the doses absorbed by various samples made of heavy materials such as lead, tin and tungsten. The energy spectrum of gamma radiations from a 10 Mw reactor of VVR-M type was measured in the energy range of 0 to 1.5 Mev and graphically illustrated. The mass absorption coefficient was then calculated and plotted against atomic numbers (from 5 to 85). This method permitted determination of the absorbed gamma-ray doses with a precision lower than 10%. Orig. art. has: 2 diagrams.

SUB CODE: 18 / SUBM DATE: 29July65 / ORIG REF: 000 / OTH REF: 000

Card 1/1

UDC: 536.629

2

Application of polarization-microscopic technique in the study of catalysis in multimolecular adsorbed layers. V. I. Gud'auskii and V. V. Karasev. *Doklady Akad. Nauk S.S.S.R.* 97, 701-2 (1977). The technique was explained in the previous paper (C.A. 46, 4881d). A study of EtOH-AcOH esterification is briefly reported. The kin-

etic characteristics in the adsorbed layer are identical with that in the liquid state if the adsorbed layer contains at least 10 mol. layers. G. M. Kosolapoff

KARASEV. V. , DERYAGIN, B. V., GOL'DANSKIY, V. I.

"Optical Investigation of Polymolecular Adsorption and Condensation of Vapors  
on Glass," Dok. AN, 57, No. 7, 1947

KARASEV, V. V., GOL'DANSKIY, V. I.

"Investigation of the Polymolecular and Condensation of Vapors on Glass,"  
Dok. AN, 57, No. 8, 1947



USSR/Physics  
films

Techniques

Oct 48

"Application of a Rotating Polarizer to the Study of the Polarization State in Reflected and Diffuse Light With the Particular Aim of Measuring Precisely the Width of Thin Films," V. V. Karasev, Corr Mem, Acad Sci USSR, B. V. Deryagin, Lab of Surface Forces, Inst of Phys Chem, Acad Sci USSR, 3 3/4 pp

"Dok Ak Nauk SSSR" Vol LXII, No 6

Use of an "electric eye" type apparatus obviated the necessity of amplifying very low frequencies or

60/497106

Oct 48

USSR/Physics (Contd)

rotating the polarizer quickly. To calculate the thickness of a film, it is sufficient to determine the reflection path from the dry "underlayer." Thereafter, it can be determined by Obreykov's method. Submitted 28 Aug 48.

60/497106

KARASEV, V.V.

KARASEV, V. V.

PA 43/49T60

USSR/Engineering  
Lamps, Mercury  
Ozone

Apr 49

"Protective Casing for Mercury Lamps," V. V.  
Karasev, Inst ~~Physicochem~~, Acad Sci USSR, 1 p

"Zavod Lab" Vol XV, No 4

Worked out a special construction for a casing  
with water cooling. Casing is a cylinder with  
two walls containing a window, door, openings for  
terminals, and two pipes for carrying off water.  
Casing is designed to eliminate danger of burns,  
and reduce the escape of ozone.

43/49T60

KARASEV, V. V.

B. V. Deriagin and V. V. Karasev. Modulation method of measuring dichroism. P. 738

Inst. of Physical Chemistry  
Academy of Sciences, USSR  
April 10, 1951

SO: Journal of Technical Physics, Vol. XXI, No. 6, June 1951

KARASEV, V.V.; DERYAGIN, B.V.

Films (Chemistry)

Micropolarization methods for measuring the thickness of thin films. Trudy Inst. fiz. khimii AN SSSR No. 1, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.